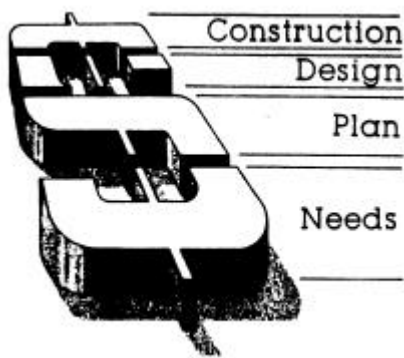


Introduction



You need to know at all times what your project will cost and when you will get it. Remember: your project budget must cover more than just construction costs. (Refer to the list of project budget components in Section II.A).

The following steps outline how to control cost during the numerous activities which might occur on any one project from the time a need is identified until the new facility is activated. As stated earlier, the process actually is very fluid. It may include all of the activities below, combine some of them or involve a different sequence of activities. For scheduling and management purposes, it usually proves helpful, if not essential, to label the project phases even though the process never actually starts and stops. For presentation purposes, the following discussion is structured by phases in a likely chronological order.

Budgeting and cost control will take two different forms during the following activities. From needs assessment through master planning, budgeting will be identified by ranges of costs for different scenarios. The ranges will be based on costs of similar projects, combined with whatever information is available about potential sites and the facility. The accuracy of this information will depend upon the depth of the study and how much time and resources you're able to devote to these endeavors. The accuracy also will depend on the expertise of those individuals who prepare the studies.

Budgeting takes on another form and tracking of costs begins once a particular scenario is selected. This scenario should meet county needs (as expressed in the Project Statement) while remaining realistic in terms of funds available. As presented in this Handbook, the decision selecting this scenario would be reached at the end of the Master Planning stage.

This is the point when you, as decision-makers, may concur, "Okay, we're going to build a 400-bed facility for \$30 million." You've chosen your goal and set your budget. Be forewarned: Two years later someone may ask, "Why did you build only 300 beds and run \$10 million over budget, to boot?"

Applying a cost control system, you can answer confidently, "Look at our cost control report for the \$30 million, 400-bed jail. That goal did not include the fountains, artwork or 400 color T.V.s with video cassette

players added later!" You may still be unemployed, but at least you have a record of all the political and nonpolitical items either tacked onto or dropped from that original project.

Preferably though, each time someone suggests a new desire for the project, you can respond, "Well, that's a wonderful idea, but since its not in the budget, we must either raise more money or cut something else out. Which would you prefer, tennis courts and cardboard walls or secure concrete walls as planned?"

In essence, this is cost control and value management. Cost control is knowing what is in your project and how much it will cost. Value management is using this information to make decisions on what you need - putting your dollars in the right places.

Your first cost control report should be prepared when the decision, 400 beds for \$30 million, has been made. This report will be an abstract cost model representing how you plan to build your goal within your budget.

What Is A Cost Control Report?

The Cost Control Report lists all of the project's components and their projected costs. Even though you may not have a lot of information, it's essential to make the assumptions required to produce a bottom line. The detail of the report will vary depending on the complexity of the project, the information available, the amount of time committed to this activity, and the expertise of the person(s) responsible for establishing this initial budget.

Begin with the original budget column found in the following examples. This will record your starting point. Depending how intensively you need to track project costs, you may increase the number of columns in your report as the project progresses. All of your project's components should be covered, including land costs, fees, contingencies, equipment, off-site costs and payments for utilities, roads, etc.

Organize your cost control report after considering how you intend to pay for your project in terms of phased construction, bid packages, different funding sources, contingencies, construction, fees, etc. Although you may not know all of this information initially, the original report should reflect known assumptions. It can be modified as required throughout the project, but the fewer modifications, the easier the process will be. Your cost control report should reflect assumptions made in your schedule.

Example 1

Assumptions:

NOTE: These examples are hypothetical.

- (1) Site improvements, demolition and onsite utilities costs vary substantially.
- (2) Fees are based on the following percentages:

Project Manager/	
Construction Manager	4.0%
Architect/Engineer	7.0%
Miscellaneous	<u>2.0%</u>
	13.0% Total
- (3) Offsite cost may vary substantially.
- (4) For this example, equipment cost is estimated at \$3,200/bed.
- (5) Based on January 1987 values.

Preliminary Budget

	Gross Square <u>Footage</u>	\$/Square <u>Footage</u>	<u>Total Costs</u>
<u>Alternative 1</u>			
500-bed Pre-Trial Facility	175,000	\$150	\$26,250,000
250-bed Medium-Security	87,500	140	12,250,000
250-bed Minimum Security	75,000	105	7,875,000
Facility Service Space	90,000	115	10,350,000
Site Improvements (1)			2,000,000
Demolition (1)			1,500,000
Onsite Utilities			2,500,000
Total Construction Cost			\$62,725,000
Contingency (5%)			3,136,250
Fees (13%) (2)			8,154,250
Subtotal (\$74,015 bed)			\$74,015,500
Offsite Utilities (3)			1,000,000
Equipment (4)			3,200,000
Site Acquisition			5,000,000
<u>PROJECT TOTAL (5)</u>	<u>427,500</u>		<u>\$83,215,500</u>

Example 2

Example 3

DATE: 12-31-84
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Cost Control Report

NO.	DESCRIPTION	(1) UNIT BLDG	(2) QTY BLDG	(3) UNIT CONTRACT	(4) QTY BLDG	(5) QTY BLDG	(6) QTY BLDG	(7) QTY BLDG	(8) QTY BLDG	(9) QTY BLDG
		0	0-499-85	50-999-85	(3-2)	(4-2)	BLDG	BLDG	BLDG	BLDG
TOTAL -										
1	SIZE	NA	4,125	4,125	0	0.00	0.20	0.00	6455	0.6
2	CONCRETE	NA	60,288	59,105	377,885	54.45	6.39	2.23	6455	14.8
3	BRICK CONCRETE	NA	473,383	0	-473,383	-100.00	0.00	-3.12	6455	0.0
4	WRECK	NA	1,255,762	1,307,517	50,755	4.08	8.72	0.33	6455	20.2
	WRECK	NA	144,126	144,127	1	0.00	0.06	0.00	6455	2.2
	WRECK	NA	1,111,636	1,163,390	51,754	0.00	1.37	0.33	6455	3.1
	WRECK	NA	1,111,636	1,163,390	51,754	0.00	1.37	0.33	6455	3.9
TOTAL -										
5	CONCRETE	NA	28,790	28,790	0	0.00	0.00	0.00	28790	20.3
6	CONCRETE	NA	288,927	288,924	-3,003	-1.05	1.96	-0.03	28790	8.8
7	WRECK	NA	237,351	237,351	0	0.00	0.00	0.00	237351	7.5
8	CONCRETE	NA	212,334	212,334	0	0.00	0.00	0.00	212334	0.1
9	WRECK	NA	2,760	2,760	0	0.00	0.00	0.00	2760	7.3
	WRECK	NA	2,760	2,760	0	0.00	0.00	0.00	2760	2.0
TOTAL -										
CONCRETE COST	NA	12,347,343	12,195,538	-151,805	-1.22	0.00	0.00	0.00	12347343	0.0
CONCRETE COST										
CONCRETE (CONCRETE)	NA	400,000	400,000	0	0.00	2.67	0.00	0.00	400000	0.0
A/E - JUNE DESIGN	NA	800,000	800,000	0	0.00	5.77	0.00	0.00	800000	0.0
A/E - REDESIGNABLE	NA	25,000	25,000	0	0.00	0.36	0.00	0.00	25000	0.0
A/E - DESIGNER DESIGN	NA	45,760	45,760	0	0.00	0.33	0.00	0.00	45760	0.0
FOURTH RUN & BUDGET	NA	175,000	175,000	0	0.00	1.36	0.00	0.00	175000	0.0
TELEPHONE	NA	75,000	75,000	0	0.00	0.50	0.00	0.00	75000	0.0
OFFICE UTILITY FEE	NA	265,322	265,322	0	0.00	0.87	1.69	0.00	265322	0.0
CLAYD BUDGET	NA	340,237	340,237	0	0.00	2.77	0.00	0.00	340237	0.0
CONCRETE MANAGEMENT	NA	106,763	106,763	0	0.00	1.34	0.00	0.00	106763	0.0
CONCRETE	NA	260,737	260,737	0	0.00	1.74	0.00	0.00	260737	0.0
CONCRETE	NA	80,000	80,000	0	0.00	0.59	0.00	0.00	80000	0.0
CONCRETE	NA	45,000	45,000	0	0.00	0.30	0.00	0.00	45000	0.0
TOTAL NON CONCRETE COST										
NA	2,760,859	2,760,277	582	0.02	18.59	0.00	0.00	2760859	0.0	
TOTAL PROJECT COST										
NA	15,128,152	14,978,805	149,347	-0.98	63,956	2.3	0.00	0.00	15128152	0.0
TOTAL -										

NOTE: CONCRETE COST W/O DESIGN (CONCRETE)
A. CONCRETE, RUN (1 MAY 85) 12,195,538
B. DESIGN DEVELOPMENT (15 JUNE 85) 12,552,438

PROJECT VARIANCE NOTICE

NO. 006-481 DATE: 12-31-84 REV: 1
PROJECT: 400 BED COUNTY JAIL
SPECIAL, SPECIFICATION, NAME, ADDRESS OF BIDDING FIRM:

DESCRIPTION OF CHANGE: CHANGE FROM PRECAST TO CAST IN PLACE CONCRETE FOR MEZZANINE FLOOR. LESS COST BECAUSE OF IRREGULAR SHAPE OF PANELS MAKES CAST IN PLACE MORE COST EFFECTIVE.

Change in scope: ☐ Scope Expansion ☐ Design Change ☐ Change in unit cost
Safety considerations: ☐ Design Criteria ☐ Change in unit cost
☒ Design Modification ☐ New Estimate ☐ Fee adjustment
☐ Policy change ☒ Value Engineering ☐ Other

APPROVED BY: JOE VALUE

EFFECT OF CONSTRUCTION COST: EFFECT OF DESIGN: EFFECT ON A/E FEE:

DECREASE/INCREASE: SHORTER/LONGER/LENGTHEN: DECREASE/INCREASE: INCREASE

Previous estimate: 1,093,471 Change: (135,315) Estimate: 958,156

Design-To-Cost Model

By establishing a budget at the outset, your entire team (including planning, design, and construction management consultants, equipment procurement staff, etc.) will have budget parameters to work within throughout the project. This approach, designing a facility to meet established budgetary goals, is referred to as a "Design-to-Cost Model" approach to cost control. Although some of the original assumptions may not prove or remain accurate, management decisions on variances (see Example 3) as they arise can be made in reaction to particular problems within the context of the whole budget picture.

See the Project Statement chapter for more information on establishing your initial project budget. Succeeding chapters explain the levels of budget detail necessary for cost analysis through the process.

